ENVIRONMENTAL ASSESSMENT OF TRAINING AREA AND MANAGEMENT MODIFICATIONS FOR THE PINON CANYON MANEUVER SITE (PCMS)

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TRAINING AREA AND MANAGEMENT MODIFICATIONS FOR THE PINON CANYON MANEUVER SITE (PCMS)

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1. Purpose and Need of the Proposed Action.

1.1. Purpose of the Action. The purpose of the Training Area and Management Modifications for the Pinon Canyon Maneuver Site (PCMS) is to improve the flexibility associated with resource management and training utilization at PCMS, while maintaining the environmental resources, improving the interaction between resource managers and using military units, and improving the quality of training.

1.2. Need for the Action. The mission of the 3rd Armored Cavalry Regiment (3 ACR) is reconnaissance and security. They could be called upon to carry out that mission in almost any location in the world. The reconnaissance part of the mission, in particular, emphasizes finding and learning about the enemy both as soon and as far away as possible. In other words, the sooner the main body of troops learns about enemy dispositions, the chance for a successful mission increases and casualties decrease. Locations or theaters of war differ widely in terrain, vegetation, etc. Each of the two large training areas at PCMS is sufficient to train for the cavalry reconnaissance mission for many, if not most, possible theaters of war. However, there are some places in the world, such as the Southwest Asia theater, where wide open terrain of great depth may be encountered in battle. Cavalry needs to train for that scenario as well. By allowing the use of a larger portion of PCMS, the 3 ACR and similar units can gain valuable training. Current management restrictions do not allow mechanized use of all potentially available training areas during an exercise. Additionally, situations may arise where mission accomplishment or Headquarters (HQ) requirements may necessitate use of PCMS during the current deferment periods.

1.3. Scope of the Environmental Assessment (EA). This EA has been prepared in accordance with the National Environmental Policy Act (Public Law (PL) 91-190), and Army Regulation (AR) 200-2, Environmental Effects of Army Actions. The EA assesses the known and potential environmental and financial impacts, both positive and negative, and possible mitigation measures. Only the resources and consequences relevant to the proposed action are addressed in this EA. This EA shall become a Supplement to the original Environmental Impact Statement (EIS) for Training Land Acquisition dated 1980.

As an aid in understanding the following, a map has been attached. This map demonstrates how the PCMS is currently divided into 17 numbered Training Areas (TAs) open to vehicular training, and 8 lettered TAs, which are only available for dismounted (non-vehicular) training. Of the numbered TAs, 7 and 10 are the largest, suitable for brigade- or regiment-size maneuvers. TAs 11 and 13 are smaller, better suited to battalion- or squadron-size maneuvers. The other numbered TAs are smaller still, generally suited to support operations such as supply, communications, aviation, etc.

As currently structured per the EIS and the Environmental Assessment for Resource Management Program Modifications, Pinon Canyon Maneuver Site (PCMS), Colorado, July 1990, (1990 EA) the numbered TAs are rotated as follows. One large TA is used for mechanized maneuver for two years, then rested for a minimum of two years while the other large TA is utilized for mechanized maneuver training. The smaller TAs are rotated in a similar manner.

The current training area configuration was authorized by the 1990 EA, which is a supplement to the original EIS. The 1990 EA also outlines certain limited types of training, such as dismounted, and mounted training only on existing roads and trails with light wheeled vehicles, which are authorized during the deferment periods of April, May, June, and from 1 December to 5 January. The 1 December to 5 January deferment was modified from the original EIS per the Record of Environmental Consideration, Deferment Period Modifications: Pinon Canyon Maneuver Site, Colorado, January 1993 (1993 REC). The 1990 EA also prescribes a rotation system for the TAs, whereby each TA will be rested for a minimum of two years before being again available for mechanized training.

The April, May, and June deferment period was authorized by the original EIS. Its purpose was primarily to protect vegetation during the spring growing season. It is also beneficial to wildlife.

In recent years, the Army has typically conducted two or three mechanized rotations per year at the PCMS, with smaller operations interspersed. Usually large mechanized rotations occur during January - March, and another during July - August. Sometimes a third will occur during September - November.

A large rotation consists, typically, of a mechanized infantry brigade, plus support elements for supply, medical, aviation, etc., which can amount to 2,000 - 3,000 vehicles of all types, and 3,000-5,500 personnel. An armored cavalry regiment is slightly larger than a mechanized brigade, mainly in terms of personnel and wheeled vehicles. Usually a rotation lasts for four to five weeks total time. However, actual full-strength maneuver time is usually three weeks. The difference is accounted for by travel, staging, down-time due to wet weather, etc.

The Wet Weather Deferment program (EIS and FC Reg 200-5), as currently implemented at PCMS, is a "green-amber-red" system. Green means there is no restriction to offroad vehicular maneuver due to wet soils. Amber means that soils are becoming saturated, and vehicles are moved to the nearest road. Red means the soils are saturated, and offroad vehicular maneuver is recommended to cease, based on recommendations from Directorate of Environmental Compliance and Management (DECAM) resource managers and military unit Maneuver Damage Control Officers. Amber conditions generally begin when vehicles are picking up mud on their tires or tracks. Red begins when ruts two inches or greater in depth are caused by moving vehicles or are anticipated by the time the recommendation would become effective. Implementation of the decision is the responsibility of the senior commander in the field.

During each rotation, DECAM resource management professionals remain fulltime on the PCMS, observe the daily training, and consistently interact with military training personnel and the unit leaders. During these interactions, or at other times as necessary, resource management professionals make recommendations to unit leaders as to maneuver damage, soil moisture conditions, direction of main axis of training, etc.

After each rotation, DECAM resource management professionals, in cooperation with other interagency partners, compile a detailed After Action Report pertaining to all environmental elements affected by the exercise. All maneuver damage is mapped and detailed. Fair wear and tear damage is listed separately from considered unnecessary, avoidable damage. Fair wear and tear damage repair is currently funded primarily by Integrated Training Area Management (ITAM) funds. Prior to fiscal year 1996, fair wear and tear damage repair was funded entirely through normal Environmental resource management channels. The cost of repairing unnecessary, avoidable damage is recovered from the operational (training) funds of the using unit.

ITAM funding is now provided through training channels, i.e. the Fort Carson Directorate of Plans, Training, and Mobilization (DPTM). These funds are closely monitored by DPTM, by the Directorate of Resource Management (DRM), and by the command group. As such, these funding sources are utilized solely for training related aspects of the resource management program.

ITAM Program funding is projected five years into the future and submitted to higher Headquarters each year, in the form of a workplan. Headquarters reviews the plan, makes any required changes, and funds as many of the requirements as possible. However, at the installation level, the command group can reprogram ITAM money for other uses if the requirement exists to do so. If that should ever happen to any large extent, then the ability to maintain the training resource could be severely impacted. In that event, it could become necessary to request additional operational funds to repair even fair wear and tear damage, or to restrict the size of the available maneuver area, or both.

Several monitoring programs assess the degree of success of the resource management program and any required mitigative repair work. The Land Condition Trend Analysis (LCTA) program is a long term, statistically based monitoring program tied to definitive locations throughout the various habitats of the PCMS. LCTA monitors mainly vegetation, but also assists DECAM and other researchers with programs monitoring wildlife population dynamics and habitat composition. Through the auspices of an Interagency Support Agreement, the US Geological Survey monitors streamflow for both quantity and quality. A network of air quality and noise quantity monitors is in place at PCMS. These monitors are read routinely prior to and during each training rotation. Cultural resource sites are monitored before, during, and after each rotation to assess overall condition and any resultant damage.

2. Description of the Proposed Action. (Hereinafter called Alternative 3).

2.1. Eliminate the Spring (April, May, and June) and Winter (1 December to 5 January) deferment periods and existing restriction to off-road vehicular maneuver. The Wet Weather Deferment program would remain in place. Monitoring would continue, or, in some cases, be enhanced. The overall resource management program would continue, in accordance with the Fort Carson Integrated Natural Resource Management Plan. Consumptive and non-consumptive utilization of the wildlife resource would continue to occur in accordance with the Cooperative Plan Agreement established with the Colorado Division of Wildlife and the U S Fish and Wildlife Service.

2.2. Allow temporary realignment of some of the TAs to provide for more flexibility and to facilitate the mission. All training areas would remain on the map as currently delineated, and could be used as such. However, if a unit required additional space, a "maneuver box" could be defined to include parts of several TAs. For example, TA 6 could be combined with TA A to form a larger dismounted-only training area; TA 14A and TA 14B could be combined; and TAs 7, 10, 11, and 12 could be combined to support mission-specific requirements. Lettered training areas would remain available only for dismounted training. Military units would be allowed, under certain conditions, to use a larger portion of the combined maneuver area than was previously possible under the 1990 EA. The larger portion referred to would change with each rotation, based on avoiding areas of previous resource degradation which have not yet recovered, and based on established mission requirements documented after required coordination between resource managers and the using military unit leadership. Coordination between resource managers and training personnel would begin no later than 90 days prior to deployment, and would continue through end of exercise (ENDEX). Specifically, as soon as a unit knows it will be going to PCMS, the unit would contact DECAM resource managers to discuss the training goals of the exercise, and the areas available due to status of the resources. Any maneuver damage occurring outside the designated maneuver box would be considered unnecessary damage and would be billed back to the unit, per FC Reg 200-5. Interactive communications between resource managers and using military unit leadership would intensify during the rotation. This communication is necessary to facilitate the mission, minimize damage to the resource, and possibly to re-orient the main axis of the exercise if necessary. Changing the direction of the main axis of an exercise not only moderates the effects on vegetation, but also provides valuable military training in utilization of unfamiliar or less-familiar terrain.

Monitoring of air and noise parameters, vegetation, wildlife, and cultural resources would continue, before, during, and after training exercises. If degradation of the resource occurs, remedies would be available per details in Section 5.

If damage occurs in excess of the funding available to repair it, operational funding would be requested to make up the shortfall, even if it is considered fair wear and tear damage. If shortfalls continue, the DECAM may close the affected areas for a minimum of two years. Also, an area could be closed for excessive damage even if the funds are available to fix it, in order to allow vegetation time to re-establish, or for other mitigative measures to be accomplished.

3. Alternatives considered.

3.1 No action (hereinafter called Alternative 1). PCMS usage and management would continue as presently structured per the original EIS and the 1990 EA.

3.2. Retain the existing Spring and Winter maneuver restriction, but expand the allowable use of TAs 7, 10, 11, and 12 for vehicular maneuver. (Hereinafter called Alternative 2). This alternative allows for a larger maneuver area during rotations but does not always meet the goal to conduct a brigade/regimental size training exercise as required by HQ. With this alternative, as well as Alternative 3, all training areas would remain on the map as currently delineated, and could be used as such. However, if a unit required additional area, a maneuver box could be defined to include parts of several TAs. Areas of previous heavy damage which have not yet recovered would be annotated as off limits, limited use, no dig, etc., as appropriate. Every effort would be made to make these areas visible in the field, by using terrain features if possible, or by marking with signs or flagging. Another technique available to moderate the effect on vegetation would be to change the direction of the primary axis of the exercise.

4. Affected Environment

4.1. Location. PCMS is located in Las Animas County, in southeastern Colorado. PCMS generally lies between U S Highway 350 on the west and the Purgatoire River on the east. PCMS is about 30 miles northeast of Trinidad, CO, on Highway 350.

4.2. Size, Configuration, and Climate. The PCMS occupies a total land area of approximately 235,896 acres, measuring about 31 miles east to west and about 21 miles north to south. The cantonment (built-up) area is located at the northwest tip of the facility, adjacent to Highway 350.

The climate at PCMS is semiarid. Mean annual temperature is about 52 degrees Fahrenheit (F). Maximum mean monthly temperature is about 89 degrees F. in July. Minimum mean monthly temperature is about 23 degrees F. during January. Mean annual precipitation is about 12 inches. Monthly precipitation for November through March is usually less than one inch, and occurs as low-intensity rainfall or as snow. Monthly precipitation during April through June is usually less than two inches. However, monthly precipitation greater than two inches is not uncommon. Monthly precipitation for July through October is usually greater than one inch. The months with highest average precipitation are May, July, and August. January and February are usually the driest months (USGS Report 91-4095, pp. 8, 12, 13).

4.3. Air Quality. Las Animas County is in attainment for all National Ambient Air Quality Standards (NAAQS). Therefore, this action is not subject to the General Conformity Rule. The air quality monitoring program at PCMS measures levels of two variables: Total Suspended Particulates (TSP), and Particulate Matter 10 microns or less in diameter (PM10).

PM10 emissions are generally man-made particulates which are inhalable into the lungs. Health problems, especially respiratory problems, have been associated with high levels of PM10. Dust and large particulates are not direct sources of PM10, but can contribute to the problem since they are subject to mechanical breakdown. Roads contribute some dust during rotations, but the majority is produced by off-road maneuver, especially where the same "lanes or access trails" are traveled repeatedly.

Monitors are located throughout the area. Data analysis has shown that, although levels of both variables within the parcel have sometimes been elevated during rotations, the levels that go beyond the facility boundaries have never exceeded allowable limits. Resource managers accomplish dust suppression at PCMS either by watering the trails and other main access routes or by applying chemical compounds which are biodegradable. These efforts, however, are costly, and thus are directly dependent on funding levels.

4.4. Soils and Topography. There are approximately 32 soil series and associations on the PCMS (Soil Conservation Service, unpublished). The soils range from shallow to deep and well drained. They formed in eolian sands, loess, alluvium, residuum, and colluvium derived mainly from shale, sandstone, and limestone.

The topography of PCMS falls generally into four regions. Woodlands, made up of pinon pine and juniper (for a list of scientific names, see Section 9 of this document), cover limestone highlands in the north and northwest. The Hogback, a basalt dike of volcanic origin, runs east and west along the southern boundary of PCMS. Grassy plains cover the area between the woodlands, the Hogback, and the Purgatoire River. The fourth region consists of the canyons draining into the Purgatoire River from the west (Friedman 1988). Elevations range from 4,400 to 5,900 feet.

Current land management practices at PCMS exclude fragile soil areas from mechanized training. These soils are primarily in what is called the Soil Protection Area and consist of approximately 20,000 acres in the thin limestone breaks in the northern part of the PCMS. Additional areas which exceed twenty percent slope are likewise restricted from mechanized training activity throughout the PCMS. Dismounted training is permitted within both the Soil Protection Area and these steeply sloped areas.

Other land management practices currently in place that are used to control and/or conserve the PCMS soil resource are the Watershed Management Program, applying land management practices on a watershed by watershed basis; revegetation of disturbed lands; the Wet Weather Deferment program; and the Maneuver Damage Control Program, which includes educating soldiers, assessing damage, and recovering costs from the units to repair damage which exceeds accepted fair wear and tear parameters.

4.5. Noise. Noise levels at PCMS increase by about 10 decibels (Day/Night level, or Ldn) during rotations, mainly due to vehicles, aircraft, and pyrotechnics. Ambient background noise levels are very low. Usual noise levels when no training is occurring are about 40 decibels at night and 50 decibels during the day. During rotations, those levels increase by about 10 decibels. Therefore, even during rotations, the PCMS falls within Zone I (Ldn less than 65) per the Federal Interagency Committee on Urban Noise, 1980. The elevated noise levels are shortlived, i.e. for several weeks per year. There is no known significant impact to wildlife or human populations associated with these noise levels.

4.6. Water and Wetlands.

4.6.1. The PCMS includes several major drainages. The Big Arroyo drainage system is located in the northwest region and flows into Timpas Creek, which is approximately three miles northwest of PCMS. The Purgatoire River and ten ephemeral, intermittent, or perennial tributaries are also located within and adjacent to PCMS (Bramblett 1989). The Purgatoire River, which flows in a northeasterly direction, is a seventh-order tributary to the Arkansas River. The Purgatoire River Canyon is off limits to all military training. The major tributary canyons are only used for dismounted training.

4.6.2. Wetlands at PCMS are generally classified as one of two types: linear or isolated. The linear type are the larger drainages, such as Van Bremer Arroyo. Isolated wetlands are small, usually less than five acres, and normally are associated with erosion control dams in smaller, intermittent drainages. All wetlands are off limits to vehicular training.

In addition to the above training restrictions, the wetlands have been mapped as part of the National Wetland Inventory, and representative areas are monitored on a regular basis for sediment. The two most prominent wetland plant species are cottonwood trees and cattails.

4.6.3. There are approximately 80 drilled wells on PCMS. Those that are functional are powered by wind or by solar energy. Several major wells have distribution lines associated with them to fill stock tanks, now used by wildlife and for fire suppression. As a protective measure, a 110-yard buffer zone around all man-made objects has been established as off limits to military vehicles.

4.7. Wildlife. Many species of wildlife, both resident and migratory, are found on PCMS. At least 54 species (37 genera) of mammals, 235 species of birds, 12 species of fish, 27 species (22 genera) of reptiles, and 7 species of amphibians have been documented, including some 88 sensitive species (Richard Bunn and Robert Davies, personal communication). Important species of management concern are pronghorn, mule deer, swift fox, peregrine falcon, Texas horned lizard, flathead chub, mountain plover, ferruginous hawk, bald eagles, and golden eagles. Most of the management efforts since the Army acquired PCMS have been directed toward overall conservation of native fish and wildlife species and their habitats. PCMS contains no known critical habitat or areas of critical environmental concern.

There are three known nesting sites of golden eagles on the PCMS, which are protected under the Bald Eagle Protection Act. The nest sites, when occupied, are currently protected by a 550-yard radius buffer zone which is off limits to training, including aviation operations. The three sites are shown on all PCMS training maps produced by DECAM.

4.8. Vegetation. Well over 300 plant species are found at PCMS (LCTA Report 1989). Most are native; some are non-native; and a few are legally considered to be noxious weeds by either the state or county government. Management control efforts for noxious weeds are currently being implemented. Scientists have grouped all these species into several "plant communities" based on various criteria (Shaw et al., 1989). The two most important vegetation types at PCMS are shortgrass prairie and pinon pine-juniper woodland. Both are valuable for military training. As a result, both have received some associated impacts during each rotation that has thus far taken place. Impacts consist of sod being uprooted or removed during excavations; soil strata being mixed during excavations; trees sustaining broken limbs or completely destroyed by being run over, etc. These impacts have been classified as either fair wear and tear, which is allowed to remain fallow and/or repaired with ITAM funds; or unnecessary, avoidable damage, paid for by the using unit. Fair wear and tear damage is defined as that which is legitimately necessary to accomplish the military training mission; for example trampled grass and shrubs, ruts up to 2 inches deep, fighting position holes which have been properly backfilled, etc. Unnecessary damage is that which is not tactically justified, such as multiple circles by tracked vehicles; ruts more than 2 inches deep; dirt piles more than 12 inches high, thus requiring grading before reseeding; or damage to fences, cultural resource sites, restricted areas, facilities, etc. On average, approximately 85% of the total impacts from a rotation is considered as fair wear and tear, the remainder being unnecessary. The education program and continual interaction between resource managers and the military are both aimed at reducing the unnecessary portion of the damage. Repair and rehabilitation consists of reseeding native perennial grass species, planting trees, and building erosion control structures such as earthen dams and rock sedimentation structures. A longer term goal is to make the landscape as resilient as possible. This is done by increasing the presence of desirable native plant species which respond well to military training, and by searching for (in cooperation with the State of Colorado and others) alternative desirable native plant species to revegetate heavily disturbed areas.

The first step in limiting maneuver damage is education and prevention. The Maneuver Damage Control Program educates soldiers in ways to minimize maneuver damage. During and after rotations, units repair what they can, for example backfilling all excavations, smoothing damaged areas, etc. Later, land managers carry out reseeding and other mechanical rehabilitation work as required.

The LCTA program monitors primarily vegetation at PCMS. Using LCTA data, statistical analysis has shown no significant difference in the amount of bare ground, amount of western wheatgrass, and amount of blue grama grass from 1989 to 1994. This is interpreted to mean that a heavy mechanized force can train on PCMS (a brigade at a time) without degrading the

resource in the long term, provided that repair and rehabilitation programs are in place within the current management programs.

4.9. Threatened and Endangered Species. Two federally listed species have been documented on PCMS, the peregrine falcon and the bald eagle (LCTA Report 1989). The bald eagle is a rare winter resident and is currently listed as threatened. The peregrine falcon is a rare migrant and is currently listed as endangered. When present, they are fully protected under the Endangered Species Act. Both species are also listed by the state of Colorado as threatened (Max Canestorp, personal communication).

There are several candidate species at PCMS, meaning there is sufficient information currently available to support a proposed rule to classify them as either threatened or endangered. These include but are not limited to swift fox, mountain plover, and dwarf milkweed. These species are monitored by DECAM and other cooperating agency personnel. If any of these species are officially proposed to be listed or are listed as threatened or endangered, there could be future impacts to both military training and to the existing implementation methodology of resource management plans.

4.10. Cultural Resources. The PCMS has a rich cultural history. With 31% of the maneuver site surveyed, 2,268 sites, both historic and prehistoric, have been identified. Of these, 680 have been determined eligible for nomination to the National Register of Historic Places. In compliance with the National Historic Preservation Act, sufficient survey has been completed to permit mechanized training in the numbered TAs (Memorandum of Agreement for Training Exercises at the Pinon Canyon Maneuver Site among Fort Carson, Colorado State Historic Preservation Office, and the Advisory Council on Historic Preservation, 28 August 1985). Current protective measures combine sample survey, predictive modeling, site protection and avoidance, and future survey. A sample (105) of the significant sites in the mechanized training areas have been fenced and signed as restricted (no vehicles, no dig) areas. All sites fenced have been determined eligible for the National Register of Historic Places. Future survey will be in high probability areas (as defined by the predictive model) on the uplands (essentially along drainages and timbered ridges) and the canyons. Survey of approximately 29% of the canyons allows limited dismounted training in these areas except for Welsh Canyon where unlimited dismounted training can take place. The 110-yard restriction applies to cultural sites, since they are manmade.

4.11. Socioeconomic. The predominant land use in the vicinity of the PCMS is livestock grazing. The surrounding area is sparsely populated, as the population of Las Animas County was 13,700 in the 1990 U.S. Census, or a population density of 2.9 persons per square mile.

5. Environmental Impacts

5.1. Location. No impact.

5.2. Size, Configuration, and Climate. No impact.

5.3. Air.

5.3.1. Alternative 1. No action. Current air monitoring programs will continue.

5.3.2. Alternative 2 and Alternative 3. The number of major rotations per year is not expected to increase over existing and/or allowable limits established by the original EIS. The number of vehicles per military unit would not increase. Eliminating the spring deferment would not appreciably increase dust generated during exercises. The air monitoring program would continue. Dust suppression would continue within funding limitations and determined effectiveness of the suppression effort. Revegetation monitoring and seeding efforts would also continue in order to minimize dust generated in TAs. Therefore, increased impacts on air quality would not be anticipated.

5.4. Soils and Topography

5.4.1. Alternative 1. No action. Current programs for reseeding, tree planting, and erosion control will continue.

5.4.2. Alternative 2. Under this alternative, the effects on soils would be similar to the No Action alternative. However, it is expected that the impacts to soils from training, such as rutting, compaction, erosion, etc., would be spread out over more acres. The current programs for mitigation would continue, except that the Rest-Rotation program would be changed to a Limited Use program, patterned after the same program implemented at Fort Carson, where areas receiving high levels of disturbance would be rested for a minimum of two years. During that time revegetation and erosion control work would be accomplished.

5.4.3 Alternative 3. The potential exists for compaction and rutting of soils, caused by training when soils are wet, whether it is during April, May, and June, or any other time of year. Compaction has never been quantified at the PCMS. Although soil compaction has an effect on plant growth, by far the main constraint to plant growth is the amount and timing of precipitation. However, the Wet Weather Deferment program would remain in effect, as would the Maneuver Damage Control Program (MDCP). These programs, among other aspects, provide for funds to be collected from units to repair unnecessary damage caused by training when soils are saturated. If excessive damage occurs during training, these areas would be designated off limits or limited use for a minimum of two years to allow reseeding and other recovery efforts. Significant impacts would be avoided by not training during wet soil conditions and by putting damaged areas into an off limits or limited use status, as required. All these measures are in accordance with the Integrated Natural Resources Management Plan for Fort Carson and the Pinon Canyon Maneuver Site, dated November 1996.

5.5. Noise

5.5.1. Alternative 1. No action. Noise monitoring would continue.

5.5.2. Alternative 2 and Alternative 3. The Army is not proposing to conduct any more rotations per year than are currently authorized within the original EIS. During the rotations they do conduct, the total numbers of vehicles and aircraft would not be significantly different than currently experienced. The noise monitoring program would continue as it has in the past. Therefore no significant changes in noise levels would be anticipated.

5.6. Water/Wetlands

5.6.1. Alternative 1. No action. Monitoring of wetlands would continue.

5.6.2. Alternative 2 and Alternative 3. Wetlands would continue to be off limits to training. The Wet Weather Deferment system provides for temporary deferments during inclement weather. Also, the MDCP, as described in Fort Carson Regulation 200-5, provides for recovering funds from the using unit to mitigate impacts to wetlands or to windmills and associated water distribution systems. Monitoring would continue as in the No Action alternative. If, under Alternative 2 or Alternative 3, water quality declines or if sediment loads increase significantly due to a single rotation or to any cumulative effects of training, then additional mitigative efforts would be accomplished as necessary to enhance management practices related to reseeding, building rock check dams, monitoring, etc., in accordance with the Integrated Natural Resource Management Plan. In addition, affected acreage would be placed in a limited use or off limits status, which would result in fewer acres available for training until the resources recover. No-net-loss of wetlands will remain the standard. Therefore, no significant impacts to wetlands or water systems would be anticipated.

5.7. Wildlife.

5.7.1. Alternative 1. No action. During past rotations, large and/or mobile species have simply moved out of the areas used by the military, then moved back in after the exercises were over (Bandy, Bunn, Canestorp and Warren, professional observations). Stephenson et al (1996) found that deer in PCMS maneuver areas had larger home range sizes than deer in PCMS nonmaneuver areas. Furthermore, female deer in maneuver areas exhibited significant home area shifts between premaneuver and maneuver periods more frequently than did deer in nonmaneuver areas. That pattern would be expected to continue. Some population monitoring would continue.

5.7.2. Alternative 2. Expanding the area used during a rotation would not be expected to have significant negative impacts on wildlife populations, as there would still be large areas of PCMS which would continue to be available for dismounted-only training and which would serve as escape cover for large and/or mobile species of wildlife. The lettered training areas, which are for dismounted training only, amount to approximately 58,892 acres, which is

approximately 25% of the land area of PCMS. These can be seen on the map attached at Section 10 of this document. There would also be an unknown number of acres in a limited use or off limits status at any given point in time, which would add to the available escape cover. Individual grassland-dwelling small mammals, reptiles, amphibians, and birds would probably be negatively impacted by expanding the area used during a rotation. However, these impacts would not be expected to be significant to the continued survival of any of these species on PCMS.

5.7.3. Alternative 3. Allowing maneuver training during the existing deferment period of April, May, and June could have impacts on wildlife. Specifically, it would be expected that some young animals, such as deer and antelope fawns, coyote and fox pups and other young ground dwellers could be killed during training. However, not all of the available fawning, denning, and nesting habitat would be utilized for military training. Lettered TAs (see map at end of this document) are only open for dismounted training. Also, areas being rehabilitated would not be available for mounted maneuver. Another concern is with certain species, such as ferruginous hawks, which are sensitive to disturbance, especially during the reproductive season. Some nest failures may be anticipated. Any necessary additional buffer zones would be determined by consultation with Colorado Division of Wildlife (CDOW) and U S Fish and Wildlife Service (USFWS) before a training rotation would begin, and communicated to the military unit through the ITAM program and through required pre-rotation coordination with DECAM. A third area of concern is with ground-nesting birds. Populations of grassland nesting birds would probably be negatively impacted by allowing maneuver training during April, May, and June. However, these impacts would not be expected to significantly threaten the continued survival of any of these species on PCMS.

As was stated in the original EIS, "Although the proposed activity would result in a certain degree of unavoidable adverse impacts, evidence at Fort Carson documents that a surprisingly diverse population of wildlife has successfully adapted to various military oriented disturbances." Fort Carson is trained on year round, including mounted maneuver, live fire, and air operations, both fixed-wing and rotary-wing. Although the ecosystems at Fort Carson may not be identical to those at PCMS, they are very similar, especially the south half of Fort Carson. Fort Carson is the nearest available sample of ecosystems similar to those on PCMS, with Army training superimposed on those ecosystems, year round, and a nearly identical land management system. Fort Carson ecosystems are, overall, more attractive habitat than the surrounding grazed private land (Brian Goss, professional observation.)

Golden eagles nest on PCMS. Under the Bald Eagle Protection Act, they are not to be "disturbed". Wildlife protection zones, identified on the PCMS map, would continue to be enforced around active eagle nest sites.

Surveys suggested as a means to monitor this proposed federal action:

1. Pronghorn aerial and hunter success surveys would be conducted on an annual basis.

2. A ferruginous hawk study would be initiated to monitor productivity. If buffer zones are warranted they would be established.

3. A grassland bird monitoring survey would continue in the maneuver areas.

4. Texas horned, short-horned, and lesser earless lizard populations would be monitored through previously established transects.

5. Aquatic species would be monitored by repeating a previously established study.

Frequency and intensity of monitoring would be determined or adjusted based on analysis of data and in consultation with CDOW and USFWS. If surveys show a declining trend below known pre-training levels, then further evaluation would be undertaken among Fort Carson and cooperating partners. This evaluation would include possible military impacts as well as national and regional trends in the species. The above studies would be done in partnership with the CDOW and USFWS and amended to the Fort Carson Integrated Natural Resource Management Plan.

To support this mitigation, military units would be requested to provide helicopter support for wildlife monitoring. This support would be determined based on need, but normally would consist of 16 hours of onsite flight time two to four times per year, supported by onsite fuel trucks provided by the flying unit. DECAM would submit the tasking requests at least 45 days prior to a required flight.

With the monitoring programs in place and the ability to adjust military training opportunities, no significant impacts to wildlife populations would be anticipated, though individual animals may be killed.

This wildlife section was developed in consultation with CDOW and USFWS.

5.8. Vegetation.

5.8.1. Alternative 1. No Action. Current programs for revegetation would continue. Native grass species are reseeded in spring and fall, and pinon pine and juniper are planted in tactically-usable patterns to replace trees lost due to training impacts.

5.8.2. Alternative 2. Spring and Winter closures remain in effect. Expanding the number of acres available for the same number of vehicles would probably have an insignificant effect on vegetation. There could be more acres disturbed, but intensity of disturbance would probably be less than at present since it would occur over a larger area, resulting in less reseeding being required. The average mileage per vehicle would probably not increase over current levels.

5.8.3. Alternative 3. Two primary concerns have been identified in regard to the proposed action. First, concern exists that vegetation (primarily perennial native grass species) would be killed or set back by disturbance during the optimal growing season. There is no doubt that some degradation would occur. The extent is unknown at this time. The question is how much is

tolerable on a military installation. To address this concern, the following program would continue. Personnel from the DECAM would monitor PCMS after each rotation. Primary parameters would be bare ground, basal cover, and frequency of perennial native grass species. Based on the monitoring and on professional judgment, the most heavily damaged areas would be placed in a Limited Use status for a minimum of two years to allow for rest and restoration. Thus, the available maneuver area would be reduced in size by the number of acres in Limited Use at any given time.

Second, concern exists in relation to increased costs and funding of monitoring and rehabilitation efforts. It is unknown at this time whether Alternative 3 would result in increased damage levels. As presently structured, fair wear and tear damage is repaired with ITAM funding through training channels. Excessive, avoidable, preventable damage is billed to the using military unit. Under Alternative 3, if the damage that occurs exceeds the funding to repair it, operational (military) funding would be requested, even if the damage is considered to be fair wear and tear. If sufficient funding is not available, DECAM could, with appropriate notice, reduce the extent of the available maneuver area for a minimum of two years, to a size which would be proportionate to the number of acres which could be reseeded with whatever money was available. With the above mitigative program in place, there would be no significant impacts to vegetation.

5.9. Threatened and Endangered Species (TES)

5.9.1. Alternatives 1, 2, and 3. No known significant impacts have occurred to bald eagles or to peregrine falcons. The bald eagle is a rare winter resident. The peregrine falcon is a rare migrant. When present, they are fully protected under the Endangered Species Act (ESA). If any candidate species, such as mountain plover, swift fox, or Texas horned lizard are proposed for listing they would be protected and managed as required by the ESA and Army Regulation 200-3.

5.10. Cultural Resources.

5.10.1. Alternative 1. No action. No impact.

5.10.2. Alternative 2 and Alternative 3. No new areas would be opened to vehicular maneuver. A sample of the significant cultural sites in the numbered TAs at PCMS have been fenced and signed. Any damage to those sites would be considered unnecessary and would require compliance with Section 106 of the National Historic Preservation Act. All mitigative costs would be billed to the unit, as is now the case. Therefore, no additional impacts would be anticipated.

5.11. Socioeconomic. Alternatives 1, 2, and 3. The proposed action and alternatives do not involve potential environmental impacts to minority or low income populations. (Executive Order 12898 ("Environmental Justice")).

6. CONCLUSION. Implementation of Alternative 3 would provide increased flexibility to the Army in the use of PCMS. Mechanized maneuver would be allowed in existing deferment periods. The designated maneuver box, at any time, could be a larger block of combined TAs 7, 10, 11, and 12 than was previously available for any single rotation.

Alternative 2, or just expanding the size of the maneuver area, would be helpful, but would not provide the maximum flexibility possible, within necessary restrictions, in the use of PCMS. The issue of training during the deferment periods would no doubt resurface in the future, so it was decided to include all known issues within this EA.

Impacts to the vegetation and wildlife of PCMS would be somewhat negative if no mitigative measures were included. However, the Maneuver Damage Control Program, which includes the Wet Weather Deferment system, would still be in place. Vegetation, wildlife populations, and funding levels for monitoring programs and rehabilitation efforts would continue to be monitored. Impacts to other aspects of the environment, such as air quality, noise levels, cultural resources, etc., would not be significant.

It is not considered that implementation of Alternative 3 as identified above would cause any significant impacts to the environment. Therefore, preparation of an Environmental Impact Statement is not required and a Finding of No Significant Impact will be published in accordance with Army Regulation 200-1, Environmental Effects of Army Actions.

7. SUMMARY of Mitigation Resource Impacts to the Army:

Provide helicopter support for monitoring of wildlife populations, typically 16 hours onsite, two to four times a year, with fuel support.

Possible requirement for operational funds to repair fair wear and tear damage only if ITAM/Environmental funding shortfalls occur. Alternative is restricting acres available for training.

Temporary (minimum of two years) deferment of training acres to repair heavy damage.

Temporary non-availability (for ground maneuver) of approximately 470 acres in spring to provide buffer zones around active nest sites. Temporary non-availability (for air operations) of approximately 1150 acres for active nest sites, which includes the above 470 acres.

8. References.

8.1. Agencies and Personnel Consulted.

Other Agencies:

Bruce Rosenlund, US Fish and Wildlife Service

Dan Sharps, US Fish and Wildlife Service

Max Canestorp, US Fish and Wildlife Service

John Kuzmiak, US Geological Survey

Robert Davies, Colorado Division of Wildlife, Colorado Springs

James Aragon, Colorado Division of Wildlife, Trinidad

Christopher Kloster, Colorado Division of Wildlife, Pueblo

John Valentine, Natural Resource Conservation Service (NRCS), Colorado Springs

Fort Carson:

Major Robert Abrams, 3 ACR Operations and Training Officer

First Lieutenant Hilary Evers, 3 ACR Engineer

Major Ray Lamb, 3 Bde, 4th Infantry Division, Operations and Training Officer

Mary Barber, Deputy, DECAM

Vicki McCusker, DECAM, NEPA Coordinator

Steve Chomko, DECAM Cultural Resource Manager

Robin Romero, DECAM, NEPA Coordinator

Gary Belew, DECAM, Natural Resource Division Chief

Jeff Linn, DECAM, Range Conservation Branch Chief

Bruce Miller, DECAM, Range Conservationist

Dave Anderson, DECAM, LCTA Coordinator

Christopher Bandy, DECAM, Wildlife Branch Chief

Richard Bunn, DECAM, Wildlife, TES

Nelson Kelm, DECAM, Noise Program Manager

Major Brian Jones, DPTM Training

Charles Markl, DPTM, Chief, Range Control

George Savoy, DPTM, ITAM

Thomas L. Warren, Director of Environmental Compliance and Management

8.2. Literature Cited.

Assessment of Effects of Military Maneuvers on the Streamflow, Water Quality, and Sediment Yields at the U S Army Pinon Canyon Maneuver Site, Las Animas County, Colorado. 1993. U S Geological Survey, Water Resources Investigation Report 91-4095.

Bramblett, R. G. 1989. Fishes of the Purgatoire River in Pinon Canyon: Impacts of Army Training and Natural Disturbance.

Environmental Assessment for Resource Management Program Modifications, Pinon Canyon Maneuver Site, Colorado, July 1990.

Environmental Impact Statement for Training Land Acquisition for Fort Carson, Colorado, with Appendices, 1980.

Fort Carson Integrated Natural Resource Management Plan. November 1996.

Friedman, P. D. 1988. Valley of Lost Souls: A History of the Pinon Canyon Region of Southeastern Colorado. Colorado Historical Society, Denver, Colorado.

Gordon, Christine. 1989. Land Condition Trend Analysis Report, Pinon Canyon Maneuver Site, Colorado.

Record of Environmental Consideration, Deferment Period Modifications: Pinon Canyon Maneuver Site, Colorado. January 1993.

Shaw, Robert B., S. L. Anderson, K. A. Shulze, and V. E. Diersing. August 1989. Plant Communities, Ecological Checklist, and Species List for the U S Army Pinon Canyon Maneuver Site, Colorado. Colorado State University, Science Series 37.

Stephenson, T. R., M. R. Vaughan, and D. E. Andersen. 1996. Mule Deer Movements in Response to Military Activity in Southeast Colorado. J. Wildl. Manage. 60(4) : 777-787.

8.3. Related Publications.

Army Regulation 200-2, Environmental Effects of Army Actions

Bald Eagle Protection Act (Public Law 86-70)

Endangered Species Act (16 USC 1531-1547)

Executive Order 12898 (Environmental Justice)

Fort Carson Regulation 200-5, Maneuver Damage Control Program

Memorandum of Agreement for Training Exercises at the Pinon Canyon Maneuver Site among Fort Carson, Colorado State Historic Preservation Office, and the Advisory Council on Historic Preservation, 28 August 1985.

National Environmental Policy Act (Public Law 91-190)

9. List of Common and Scientific Names.

Blue grama	*Bouteloua gracilis*
Cattail	*Typha* species
Cottonwood	*Populus deltoides*
Dwarf milkweed	*Asclepias uncialis*
Juniper	*Juniperus monosperma*
Pinon pine	*Pinus edulis*
Western wheatgrass	*Agropyron smithii*
Bald eagle	*Haliaeetus leucocephalus*
Ferruginous hawk	*Buteo regalis*
Golden eagle	*Aquila chrysaetos*
Mountain plover	*Charadrius montanus*
Peregrine falcon	*Falco peregrinus*
Scaled quail	*Callipepla squamata*
Coyote	*Canis latrans*
Mule deer	*Odocoileus hemionus*
Pronghorn	*Antilocapra americana*
Rabbit, desert cottontail	*Sylvilagus audubonii*
Rabbit, black tailed jack	*Lepus californicus*
Swift fox	*Vulpes velox*
Texas horned lizard	*Phrynosoma cornutum*
Short-horned lizard	*Phrynosoma douglassii*

Lesser earless lizard	*Holbrookia maculata*
Flathead chub	*Platygobio gracilis*

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT OF TRAINING AREA AND MANAGEMENT MODIFICATIONS FOR THE PINON CANYON MANEUVER SITE (PCMS), COLORADO

Commander, Headquarters Fort Carson, ATTN: AFZC-ECM, Building 302,
Fort Carson, Colorado 80913-5000

Phone: (719) 526-4667/2022

1. To all interested agencies, groups, and persons:

PROPOSED ACTION: The proposed action is to eliminate the spring (April, May, and June) and winter (1 December to 5 January) restriction to off-road vehicular maneuver, and also to allow temporary use of a larger maneuver area. All training areas would remain on the map as currently delineated, and could be used as such. Training areas now available only for dismounted training would remain dismounted-only areas. However, if a unit needed more space to train for a specific mission, a maneuver box could be defined to include parts of several Training Areas. The Wet Weather Deferment Program would remain in place. Monitoring of air, noise, vegetation, wildlife, and cultural resources would continue, or, in some cases, resume. The overall resource management program would continue, in accordance with the Fort Carson Integrated Natural Resource Management Plan.

PURPOSE OF THE ACTION: The purpose of the Training Area and Management Modifications for PCMS is to improve the flexibility associated with resource management and training utilization at PCMS, while maintaining the environmental resources, improving the interaction between resource managers and using military units, and improving the quality of training.

ALTERNATIVES CONSIDERED:

1. No action. Existing spring and winter deferments would remain in effect, and maneuver areas would be confined to their current structure and sizes.

2. Retain the spring and winter deferment periods, but allow temporary definition of a larger maneuver box. This alternative would be helpful to the Army, but would not provide the maximum flexibility possible, within necessary restrictions, in the use of PCMS to conduct brigade size training exercises as required by Headquarters.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION: The anticipated environmental impacts of the proposed action are considered to include neither significantly positive or negative impacts.

It has been determined that this proposed action would not constitute an action significantly affecting the quality of the environment. Accordingly, the Commander, Fort Carson has decided not to prepare an Environmental Impact Statement (EIS) under the National Environmental Policy Act of 1969 (PL 91-190). Reasons for the decision not to prepare such a statement are as follows:

a. There will be no adverse impacts on threatened or endangered species or their critical habitats.

b. The proposal will not significantly affect air or water quality nor increase current noise levels.

c. The proposal will not significantly affect the social or economic structure of adjacent communities.

d. There will be no adverse impacts on significant historic properties or cultural resources.

e. The proposal will not significantly affect environmental quality or public health or safety.

2. An environmental assessment that addresses environmental impacts of the proposed action and the rationale as to why an EIS is not required is available for public examination, upon request at the below address; at the La Junta, CO Public Library; at the Trinidad, CO Public Library; and at PCMS Headquarters. All requests should be directed to the telephone numbers listed above. All interested agencies, groups, and individuals not in agreement with this decision are invited to submit written comments for consideration by the Commander, Fort Carson, within 30 days after publication of this document. The proposed action will not be implemented prior to this date.

Comments should be directed to:

Commander, Fort Carson
ATTN: AFZC-ECM (Building 302)
Fort Carson, CO 80913-5000

AFZC-JA-AL (AFZC-ECM/5 Mar 97) (420-74a) 1st End
CPT Wolf/6-1825
SUBJECT: Draft Final, PCMS Environmental Assessment

Office of the Staff Judge Advocate, ATTN: AFZC-JA-AL, Fort Carson, Colorado 80913 6 March 1997

FOR Directorate of Environmental Compliance and Management, ATTN: Mr. Brian Goss, Fort Carson, CO 80913

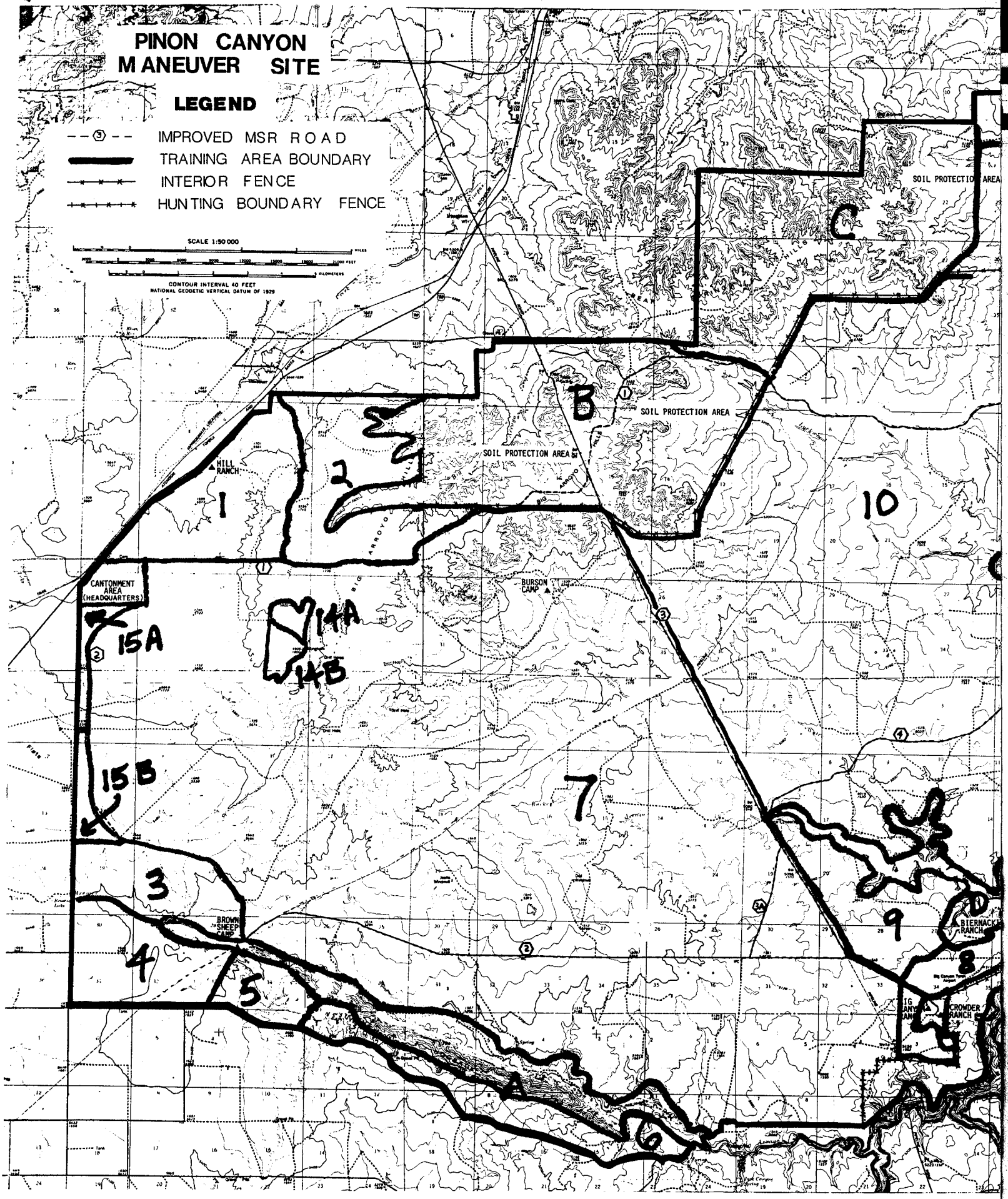
1. We have reviewed the subject Environmental Assessment and find it legally sufficient. The document complies with and meets the requirements of AR 200-2 and the National Environmental Policy Act, 40 CFR §1500 et seq.

2. We have also reviewed the proposed Finding of No Significant Impact (FNSI) and find it legally sufficient. The FNSI should be published IAW 40 CFR §1506.6(b).

3. POC is the undersigned at 6-1825.

FOR THE STAFF JUDGE ADVOCATE:

PHILLIP J. WOLF
CPT, JA
Environmental Law Attorney


PINON CANYON
MANEUVER SITE
LEGEND
IMPROVED MSR ROAD
TRAINING AREA BOUNDARY
INTERIOR FENCE
HUNTING BOUNDARY FENCE
SCALE 1:50 000
CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
SOIL PROTECTION AREA
SOIL PROTECTION AREA
SOIL PROTECTION AREA
HILL RANCH
CANTONMENT AREA (HEADQUARTERS)
BURSON CAMP
BROWN SHEEP CAMP
BIERNACKI RANCH
CROWDER RANCH
BIG ARROYO
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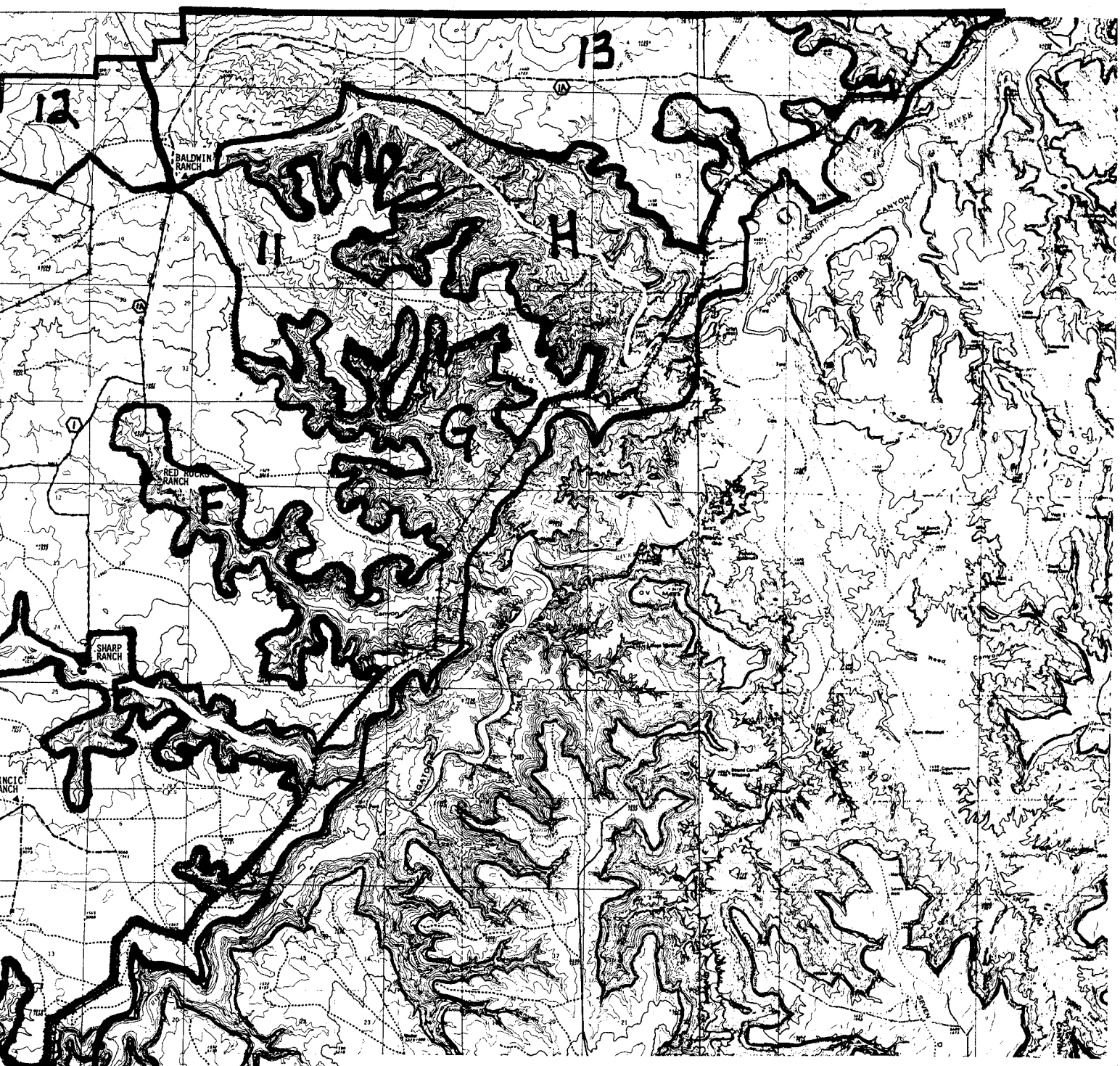

NOTES:

1. A - H Dismounted Training; No Dig.
2. 1 - 15 Mechanized Training.
3. Off Limits Areas: Generally rotate/rest on a two-year cycle. Check with PCMS HQ.
4. Restricted Areas: Personnel hazards, wildlife habitat, historic sites. Marked by red or white signs. No admittance.
5. All man-made structures: Stay 100 meters away.
6. Natural gas pipeline: Stay outside signs. Cross at the perpendicular. No bivouac or dig between lines of signs.
7. Drive your tracked vehicles on the MSR's. There are no separate tank trails.
8. The Hogback and the canyons are not fenced or signed, but are not open for mechanized training.